

Reliability Test Report

Product Name:	Ai-WS1 Series
Product Model:	Ai-WS1-CBS-Kit
Test Date:	2024.11.18–2024.11.26
Tested by:	Yuan Nannan
Reviewed by:	An Sanchao


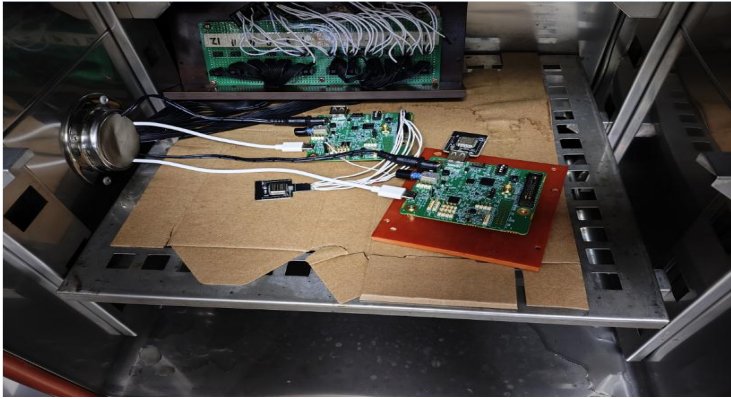
1. Inspection Standard

No.	Process Name	Inspection Item	Inspection Equipment	Sampling Level (Refer to GB/T 2828.1-2012)	Acceptable Quality Level		
					CR (Critical Defect)	MA (Major Defect)	MI (Minor Defect)
1	Reliability test	High/low temperature storage; high/room/low temperature power on/off; high/low temperature operation; alternating hot and humid; thermal shock	Constant temperature and humidity chamber	Normal single sampling, special inspection S-1	0 accept, 1 reject		

2. Test Items

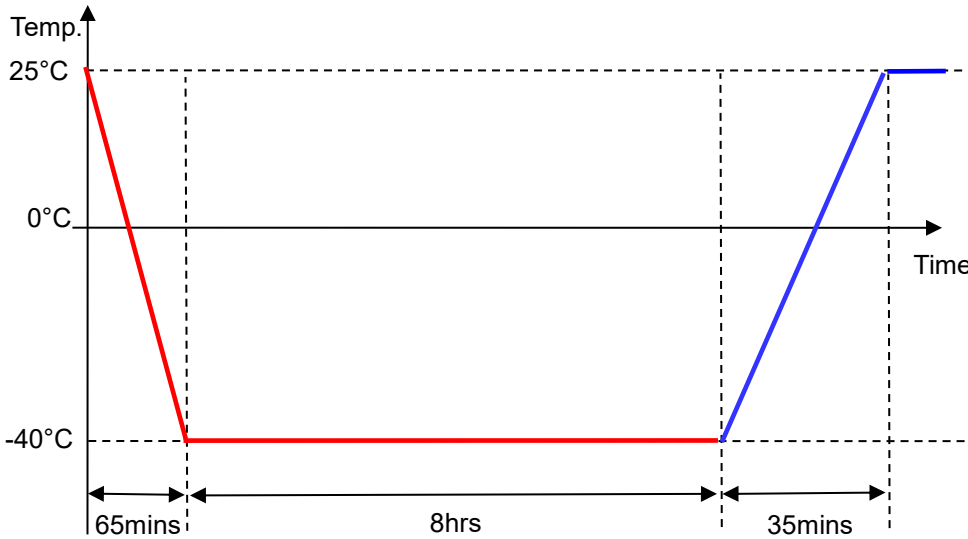
No.	Item	Test Conditions
1	Low temperature storage test	Test conditions: -40°C Test duration: 8h After a 1-hour soak at -40°C, perform a cold start test.
2	High temperature storage test	Test conditions: 100°C + 93% RH Test duration: 8h After restoring to 85°C and a 1-hour soak, perform a hot start test.
3	Low temperature operation test	Test conditions: -40°C Test duration: 24h
4	High temperature operation test	Test conditions: 85°C + 93% RH Test duration: 24h
5	AC power on/off test with temperature	A) Temperature: -40°C B) Temperature: 25°C + 93% RH C) Temperature: 85°C + 93% RH Cycle each condition 200 times, with 30s ON and 30s OFF.
6	Alternating hot and humid test	A) Operate at 85°C + 93% RH for 4h; B) Operate at 25°C + 93% RH for 4h; Cycle steps A and B for a total of 2 cycles. Test duration: 2 cycles, 16h
7	Thermal shock test	Test conditions: -40°C–100°C + 93% RH, soak for 30min at each temperature. Temperature transition time: 50min for heating, 2h for cooling. Test duration: 5 cycles, 16h

3. Test Preparation

No.	Item	Image/Attachment
1	Reliability documentation	Refer to the Wi-Fi test specification for Ai-WS1-CBS & CBE series modules
2	Test equipment	
3	Sample placement	
4	Test reason	Reliability test for new product (90240005-NodeMCU-Ai-WS1-CBS-Kit)

4. Low Temperature Storage Test (Low temperature storage test)

Test Conditions: Power-off test. Store the product at -40°C for 8h, then perform a cold start test.



Test Profile:

Is Power Off ——
 Is Power On ——

Test Criteria:

1. No network disconnections occurred during the test. If ping packets are confirmed not to be lost, the module is considered to be functional.
2. After the test, the product shows no visible damage such as shrinkage, peeling, or discoloration.

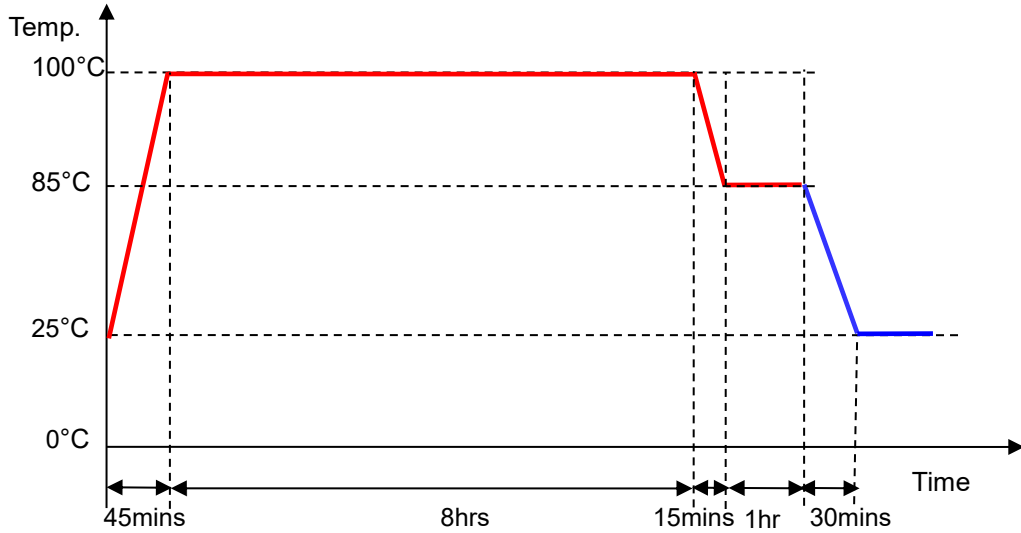
Sample Quantity	Test Data	Test Results
1PCS	<p>The test data section contains two images. The left image shows a '可编程恒温恒湿试验箱' (Programmable Constant Temperature and Humidity Test Chamber) with a digital display showing -40.00°C. The right image shows a computer screen displaying a network ping log with the following data:</p> <pre> 64 bytes from 192.168.199.1: seq=1820 ttl=64 time=1.355 ms 64 bytes from 192.168.199.1: seq=1821 ttl=64 time=1.333 ms 64 bytes from 192.168.199.1: seq=1822 ttl=64 time=1.308 ms 64 bytes from 192.168.199.1: seq=1823 ttl=64 time=1.322 ms 64 bytes from 192.168.199.1: seq=1824 ttl=64 time=1.289 ms 64 bytes from 192.168.199.1: seq=1825 ttl=64 time=1.340 ms 64 bytes from 192.168.199.1: seq=1826 ttl=64 time=1.047 ms 64 bytes from 192.168.199.1: seq=1827 ttl=64 time=1.056 ms 64 bytes from 192.168.199.1: seq=1828 ttl=64 time=1.107 ms 64 bytes from 192.168.199.1: seq=1829 ttl=64 time=1.036 ms 64 bytes from 192.168.199.1: seq=1830 ttl=64 time=1.040 ms 64 bytes from 192.168.199.1: seq=1831 ttl=64 time=1.039 ms 64 bytes from 192.168.199.1: seq=1832 ttl=64 time=1.035 ms 64 bytes from 192.168.199.1: seq=1833 ttl=64 time=1.031 ms 64 bytes from 192.168.199.1: seq=1834 ttl=64 time=1.037 ms 64 bytes from 192.168.199.1: seq=1835 ttl=64 time=1.044 ms 64 bytes from 192.168.199.1: seq=1836 ttl=64 time=1.045 ms 64 bytes from 192.168.199.1: seq=1837 ttl=64 time=1.055 ms 64 bytes from 192.168.199.1: seq=1838 ttl=64 time=1.031 ms 64 bytes from 192.168.199.1: seq=1839 ttl=64 time=1.037 ms 64 bytes from 192.168.199.1: seq=1840 ttl=64 time=1.235 ms 64 bytes from 192.168.199.1: seq=1841 ttl=64 time=2.256 ms 64 bytes from 192.168.199.1: seq=1842 ttl=64 time=1.645 ms 64 bytes from 192.168.199.1: seq=1843 ttl=64 time=1.679 ms 64 bytes from 192.168.199.1: seq=1844 ttl=64 time=1.636 ms 64 bytes from 192.168.199.1: seq=1845 ttl=64 time=2.163 ms 64 bytes from 192.168.199.1: seq=1846 ttl=64 time=2.001 ms 64 bytes from 192.168.199.1: seq=1847 ttl=64 time=1.636 ms 64 bytes from 192.168.199.1: seq=1848 ttl=64 time=1.707 ms 64 bytes from 192.168.199.1: seq=1849 ttl=64 time=2.830 ms 64 bytes from 192.168.199.1: seq=1850 ttl=64 time=1.898 ms 64 bytes from 192.168.199.1: seq=1851 ttl=64 time=1.781 ms 64 bytes from 192.168.199.1: seq=1852 ttl=64 time=2.024 ms 64 bytes from 192.168.199.1: seq=1853 ttl=64 time=1.659 ms 64 bytes from 192.168.199.1: seq=1854 ttl=64 time=1.633 ms 64 bytes from 192.168.199.1: seq=1855 ttl=64 time=1.679 ms 64 bytes from 192.168.199.1: seq=1856 ttl=64 time=1.918 ms 64 bytes from 192.168.199.1: seq=1857 ttl=64 time=1.641 ms 64 bytes from 192.168.199.1: seq=1858 ttl=64 time=1.654 ms 64 bytes from 192.168.199.1: seq=1859 ttl=64 time=1.644 ms 64 bytes from 192.168.199.1: seq=1860 ttl=64 time=1.610 ms 64 bytes from 192.168.199.1: seq=1861 ttl=64 time=1.644 ms 64 bytes from 192.168.199.1: seq=1862 ttl=64 time=1.554 ms 64 bytes from 192.168.199.1: seq=1863 ttl=64 time=1.644 ms 64 bytes from 192.168.199.1: seq=1864 ttl=64 time=1.610 ms 64 bytes from 192.168.199.1: seq=1865 ttl=64 time=1.644 ms 64 bytes from 192.168.199.1: seq=1866 ttl=64 time=1.610 ms 64 bytes from 192.168.199.1: seq=1867 ttl=64 time=1.644 ms 64 bytes from 192.168.199.1: seq=1868 ttl=64 time=1.610 ms 64 bytes from 192.168.199.1: seq=1869 ttl=64 time=1.644 ms 64 bytes from 192.168.199.1: seq=1870 ttl=64 time=1.610 ms 64 bytes from 192.168.199.1: seq=1871 ttl=64 time=1.644 ms 64 bytes from 192.168.199.1: seq=1872 ttl=64 time=1.610 ms 64 bytes from 192.168.199.1: seq=1873 ttl=64 time=1.644 ms 64 bytes from 192.168.199.1: seq=1874 ttl=64 time=1.610 ms 64 bytes from 192.168.199.1: seq=1875 ttl=64 time=1.644 ms 64 bytes from 192.168.199.1: seq=1876 ttl=64 time=1.610 ms 64 bytes from 192.168.199.1: seq=1877 ttl=64 time=1.799 ms 64 bytes from 192.168.199.1: seq=1878 ttl=64 time=1.898 ms 64 bytes from 192.168.199.1: seq=1879 ttl=64 time=1.649 ms 64 bytes from 192.168.199.1: seq=1880 ttl=64 time=1.654 ms 64 bytes from 192.168.199.1: seq=1881 ttl=64 time=1.623 ms 64 bytes from 192.168.199.1: seq=1882 ttl=64 time=1.654 ms 64 bytes from 192.168.199.1: seq=1883 ttl=64 time=1.695 ms 64 bytes from 192.168.199.1: seq=1884 ttl=64 time=1.652 ms 64 bytes from 192.168.199.1: seq=1885 ttl=64 time=1.776 ms 64 bytes from 192.168.199.1: seq=1886 ttl=64 time=2.980 ms </pre>	PASS

5. High Temperature Storage Test

Test Conditions: Power-off test. Store the product at 100°C + 93% RH for 8h, then restore it to 85°C + 93% RH for a 1-hour soak, and perform a hot start test.

Test Profile:

Is Power Off ——
 Is Power On ——



Test Criteria:

1. No network disconnections occurred during the test. If ping packets are confirmed not to be lost, the module is considered to be functional.
2. After the test, the product shows no visible damage such as shrinkage, peeling, or discoloration.

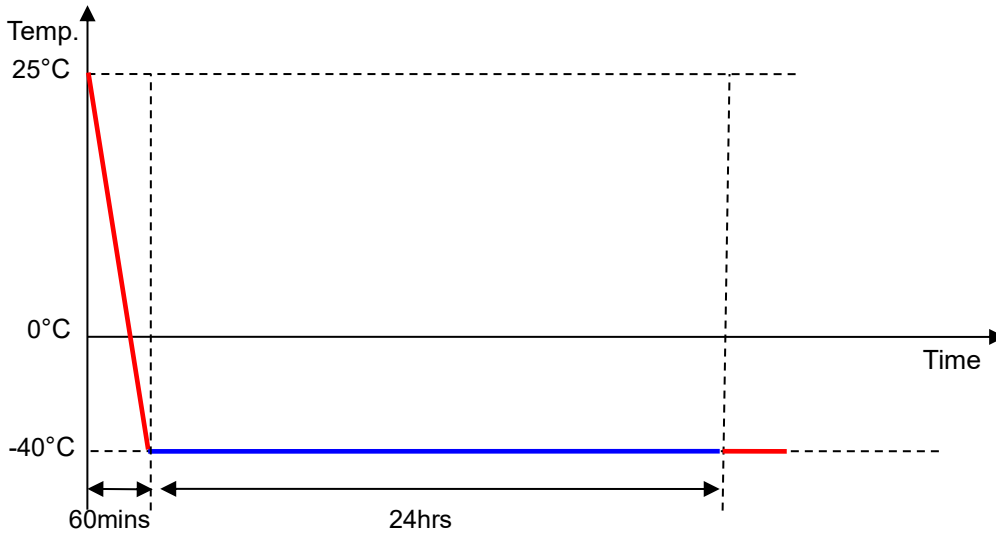
Sample Quantity	Test Data	Test Results
1PCS	<p>The photograph shows a control panel for a '可程式恒温恒湿试验箱' (Programmable Constant Temperature and Humidity Test Chamber). The screen displays '100.01'. Below the screen are buttons for '启动' (Start), '停止' (Stop), '通讯' (Communication), and '故障报警' (Failure Alarm). To the right of the panel is a printed log of ping test results, showing multiple successful pings from 192.168.199.1 to 192.168.199.1 with various sequence numbers and response times.</p>	PASS

6. Low Temperature Operation Test

Test Conditions: Power-on test. Operate at -40°C for 24h.


Test Profile:

Is Power Off —
Is Power On —



Test Criteria:

1. No network disconnections occurred during the test. If ping packets are confirmed not to be lost, the module is considered to be functional.
2. After the test, the product shows no visible damage such as shrinkage, peeling, or discoloration.

Sample Quantity	Test Data	Test Results
1PCS	 <pre data-bbox="890 1346 1161 1825"> 64 bytes from 192.168.199.1: seq=61231 ttl=64 time=1.454 ms 64 bytes from 192.168.199.1: seq=61232 ttl=64 time=1.464 ms 64 bytes from 192.168.199.1: seq=61233 ttl=64 time=1.583 ms 64 bytes from 192.168.199.1: seq=61234 ttl=64 time=2.157 ms 64 bytes from 192.168.199.1: seq=61241 ttl=64 time=2.233 ms 64 bytes from 192.168.199.1: seq=61242 ttl=64 time=1.550 ms 64 bytes from 192.168.199.1: seq=61243 ttl=64 time=1.512 ms 64 bytes from 192.168.199.1: seq=61244 ttl=64 time=1.375 ms 64 bytes from 192.168.199.1: seq=61245 ttl=64 time=1.595 ms 64 bytes from 192.168.199.1: seq=61246 ttl=64 time=1.562 ms 64 bytes from 192.168.199.1: seq=61247 ttl=64 time=1.275 ms 64 bytes from 192.168.199.1: seq=61248 ttl=64 time=1.276 ms 64 bytes from 192.168.199.1: seq=61249 ttl=64 time=1.459 ms 64 bytes from 192.168.199.1: seq=61250 ttl=64 time=1.448 ms 64 bytes from 192.168.199.1: seq=61251 ttl=64 time=1.486 ms 64 bytes from 192.168.199.1: seq=61252 ttl=64 time=1.373 ms 64 bytes from 192.168.199.1: seq=61253 ttl=64 time=1.466 ms 64 bytes from 192.168.199.1: seq=61254 ttl=64 time=1.449 ms 64 bytes from 192.168.199.1: seq=61255 ttl=64 time=1.549 ms 64 bytes from 192.168.199.1: seq=61256 ttl=64 time=1.490 ms 64 bytes from 192.168.199.1: seq=61257 ttl=64 time=1.269 ms 64 bytes from 192.168.199.1: seq=61258 ttl=64 time=1.309 ms 64 bytes from 192.168.199.1: seq=61259 ttl=64 time=1.438 ms 64 bytes from 192.168.199.1: seq=61260 ttl=64 time=1.594 ms 64 bytes from 192.168.199.1: seq=61261 ttl=64 time=1.434 ms 64 bytes from 192.168.199.1: seq=61262 ttl=64 time=2.287 ms 64 bytes from 192.168.199.1: seq=61263 ttl=64 time=1.524 ms 64 bytes from 192.168.199.1: seq=61264 ttl=64 time=1.537 ms 64 bytes from 192.168.199.1: seq=61265 ttl=64 time=1.453 ms 64 bytes from 192.168.199.1: seq=61266 ttl=64 time=1.449 ms 64 bytes from 192.168.199.1: seq=61267 ttl=64 time=1.513 ms 64 bytes from 192.168.199.1: seq=61268 ttl=64 time=1.525 ms 64 bytes from 192.168.199.1: seq=61269 ttl=64 time=1.407 ms 64 bytes from 192.168.199.1: seq=61270 ttl=64 time=1.498 ms 64 bytes from 192.168.199.1: seq=61271 ttl=64 time=1.556 ms 64 bytes from 192.168.199.1: seq=61272 ttl=64 time=1.609 ms 64 bytes from 192.168.199.1: seq=61273 ttl=64 time=1.609 ms 64 bytes from 192.168.199.1: seq=61274 ttl=64 time=1.435 ms 64 bytes from 192.168.199.1: seq=61275 ttl=64 time=1.408 ms 64 bytes from 192.168.199.1: seq=61276 ttl=64 time=1.513 ms 64 bytes from 192.168.199.1: seq=61277 ttl=64 time=1.402 ms 64 bytes from 192.168.199.1: seq=61278 ttl=64 time=1.693 ms 64 bytes from 192.168.199.1: seq=61279 ttl=64 time=1.487 ms 64 bytes from 192.168.199.1: seq=61280 ttl=64 time=2.278 ms 64 bytes from 192.168.199.1: seq=61281 ttl=64 time=1.482 ms 64 bytes from 192.168.199.1: seq=61282 ttl=64 time=1.687 ms 64 bytes from 192.168.199.1: seq=61283 ttl=64 time=1.549 ms 64 bytes from 192.168.199.1: seq=61284 ttl=64 time=1.592 ms 64 bytes from 192.168.199.1: seq=61285 ttl=64 time=1.748 ms 64 bytes from 192.168.199.1: seq=61286 ttl=64 time=1.595 ms 64 bytes from 192.168.199.1: seq=61287 ttl=64 time=1.435 ms 64 bytes from 192.168.199.1: seq=61288 ttl=64 time=1.490 ms 64 bytes from 192.168.199.1: seq=61289 ttl=64 time=1.443 ms 64 bytes from 192.168.199.1: seq=61290 ttl=64 time=2.272 ms 64 bytes from 192.168.199.1: seq=61291 ttl=64 time=1.508 ms 64 bytes from 192.168.199.1: seq=61292 ttl=64 time=1.508 ms 64 bytes from 192.168.199.1: seq=61293 ttl=64 time=1.508 ms </pre>	PASS

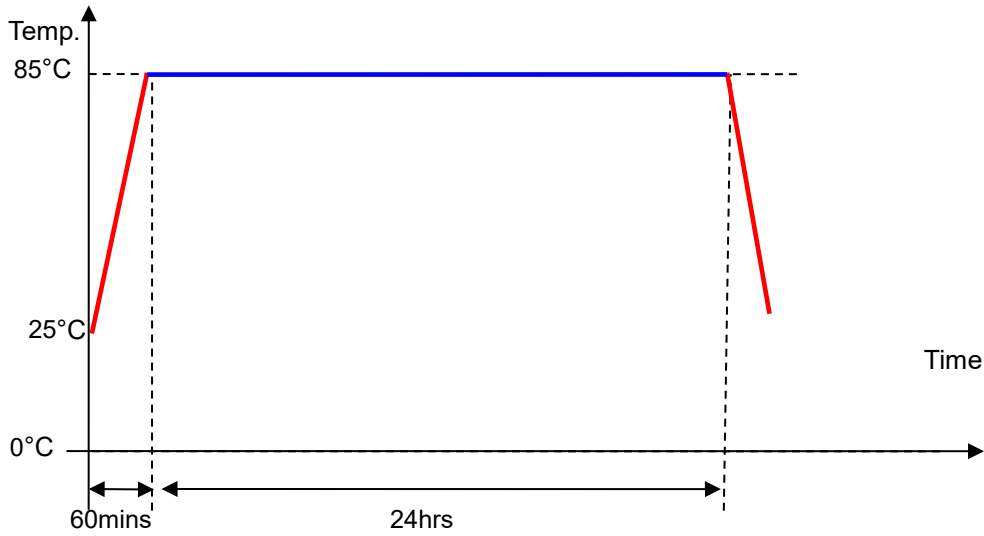
7. High Temperature Operation Test

Test Conditions: Power-on test. Operate at 85°C+ 93% RH for 24h.

Test Profile:

Is Power Off ——— (Red line)

Is Power On ——— (Blue line)



Test Criteria:

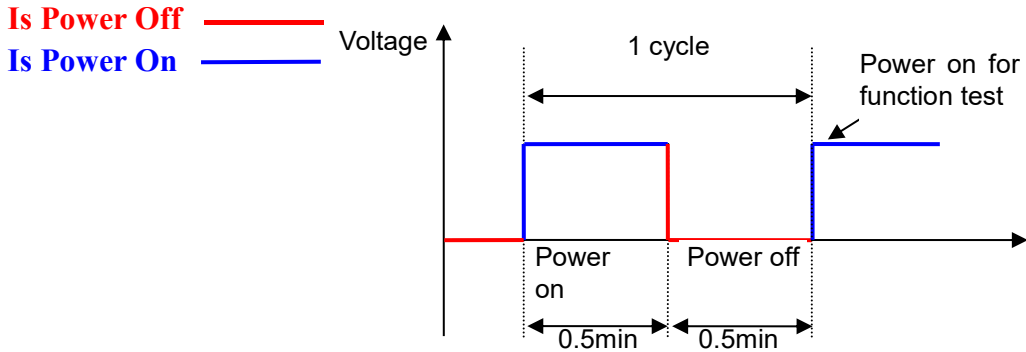
1. No network disconnections occurred during the test. If ping packets are confirmed not to be lost, the module is considered to be functional.
2. After the test, the product shows no visible damage such as shrinkage, peeling, or discoloration.

Sample Quantity	Test Data	Test Results
1PCS		PASS

8. AC Power On/Off Test with Temperature

- Test Conditions:**
1. Power on: 30s; power off: 30s.
 2. Temperature: -40°C, 25°C + 93% RH, 85°C + 93% RH.
 3. Cycle: Each test condition cycles 200 times.

Test Profile:



Test Criteria:

1. After the module is properly connected, power on the module and start the test by sending commands. Normal network ping packets observed in the module's LOG information indicate that the module is functioning properly.
2. After the test, the product shows no visible damage such as shrinkage, peeling, or discoloration.

Item	Sample Quantity	Test Data	Test Results
Power on/off at room temperature	1PCS		PASS

9. Alternating Hot and Humid Test

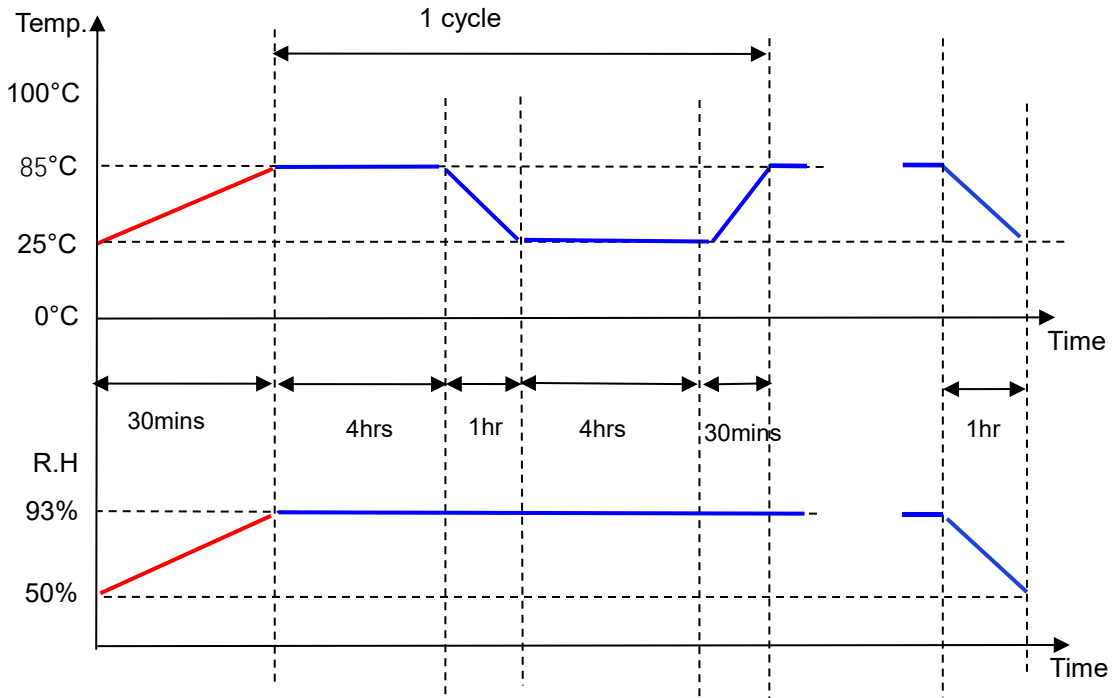
Test Conditions:

1. Operate at 85°C + 93% RH for 4h;
 2. Operate at 25°C + 93% RH for 4h;
- Cycle step 1 and step 2, a total of 2 cycles.

Test Profile:

Is Power Off —

Is Power On —



Test Criteria:

1. No network disconnections occurred during the test. If ping packets are confirmed not to be lost, the module is considered to be functional.
2. After the test, the product shows no visible damage such as shrinkage, peeling, or discoloration.

Sample Quantity	Test Data	Test Results
1PCS	<pre> 64 bytes from 192.168.199.1: seq=24300 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24301 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24302 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24303 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24304 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24305 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24306 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24307 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24308 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24309 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24310 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24311 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24312 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24313 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24314 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24315 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24316 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24317 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24318 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24319 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24320 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24321 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24322 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24323 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24324 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24325 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24326 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24327 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24328 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24329 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24330 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24331 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24332 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24333 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24334 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24335 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24336 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24337 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24338 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24339 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24340 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24341 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24342 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24343 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24344 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24345 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24346 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24347 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24348 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24349 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24350 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24351 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24352 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24353 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24354 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24355 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24356 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24357 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24358 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24359 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24360 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24361 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24362 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24363 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24364 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24365 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24366 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24367 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24368 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24369 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24370 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24371 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24372 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24373 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24374 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24375 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24376 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24377 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24378 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24379 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24380 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24381 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24382 ttl=64 time=1.551 ms 64 bytes from 192.168.199.1: seq=24383 ttl=64 time=1.548 ms 64 bytes from 192.168.199.1: seq=24384 ttl=64 time=1.515 ms 64 bytes from 192.168.199.1: seq=24385 ttl=64 time=1.469 ms 64 bytes from 192.168.199.1: seq=24386 ttl=64 time=3.407 ms 64 bytes from 192.168.199.1: seq=24387 ttl=64 time=1.507 ms 64 bytes from 192.168.199.1: seq=24388 ttl=64 time=1.471 ms 64 bytes from 192.168.199.1: seq=24389 ttl=64 time=1.464 ms </pre>	PASS

10. Thermal Shock Test

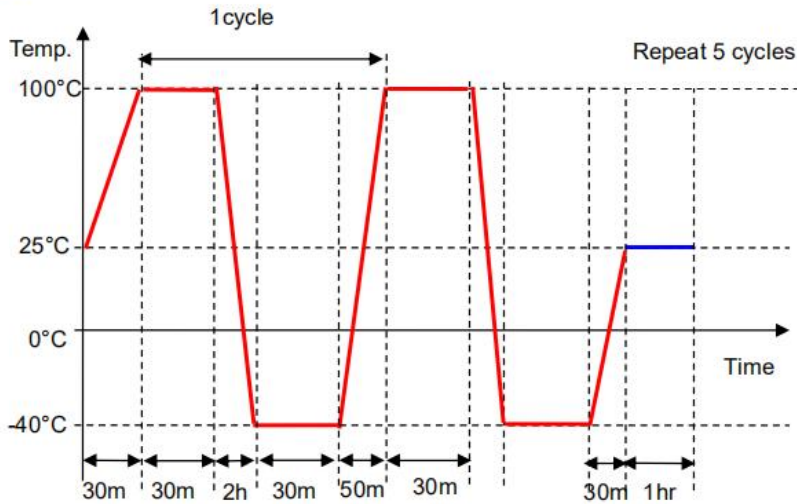
Test Conditions:

Power-off test. Temperature cycling between -40–100°C + 93% RH, with a heating time of 50min and a cooling time of 2h. Each stage is held for 30min, for a total of 5 cycles.

Test Profile:

Is Power Off

Is Power On



Test Criteria:

1. No network disconnections occurred during the test. If ping packets are confirmed not to be lost, the module is considered to be functional.
2. After the test, the product shows no visible damage such as shrinkage, peeling, or discoloration.

Sample Quantity	Test Data	Test Results
1PCS	<pre> 64 bytes from 192.168.199.1: seq=61901 ttl=64 time=1.701 ms 64 bytes from 192.168.199.1: seq=61902 ttl=64 time=1.293 ms 64 bytes from 192.168.199.1: seq=61903 ttl=64 time=1.002 ms 64 bytes from 192.168.199.1: seq=61904 ttl=64 time=1.619 ms 64 bytes from 192.168.199.1: seq=61905 ttl=64 time=1.956 ms 64 bytes from 192.168.199.1: seq=61906 ttl=64 time=1.499 ms 64 bytes from 192.168.199.1: seq=61907 ttl=64 time=1.643 ms 64 bytes from 192.168.199.1: seq=61908 ttl=64 time=1.524 ms 64 bytes from 192.168.199.1: seq=61909 ttl=64 time=2.440 ms 64 bytes from 192.168.199.1: seq=61910 ttl=64 time=1.635 ms 64 bytes from 192.168.199.1: seq=61911 ttl=64 time=4.524 ms 64 bytes from 192.168.199.1: seq=61912 ttl=64 time=2.113 ms 64 bytes from 192.168.199.1: seq=61913 ttl=64 time=4.135 ms 64 bytes from 192.168.199.1: seq=61914 ttl=64 time=8.245 ms 64 bytes from 192.168.199.1: seq=61915 ttl=64 time=1.797 ms 64 bytes from 192.168.199.1: seq=61916 ttl=64 time=2.904 ms 64 bytes from 192.168.199.1: seq=61917 ttl=64 time=3.155 ms 64 bytes from 192.168.199.1: seq=61918 ttl=64 time=6.528 ms 64 bytes from 192.168.199.1: seq=61919 ttl=64 time=1.628 ms 64 bytes from 192.168.199.1: seq=61920 ttl=64 time=1.803 ms 64 bytes from 192.168.199.1: seq=61921 ttl=64 time=1.773 ms 64 bytes from 192.168.199.1: seq=61922 ttl=64 time=2.277 ms 64 bytes from 192.168.199.1: seq=61923 ttl=64 time=1.660 ms 64 bytes from 192.168.199.1: seq=61924 ttl=64 time=1.649 ms 64 bytes from 192.168.199.1: seq=61925 ttl=64 time=3.408 ms 64 bytes from 192.168.199.1: seq=61926 ttl=64 time=1.543 ms 64 bytes from 192.168.199.1: seq=61927 ttl=64 time=3.133 ms 64 bytes from 192.168.199.1: seq=61928 ttl=64 time=1.765 ms 64 bytes from 192.168.199.1: seq=61929 ttl=64 time=1.527 ms 64 bytes from 192.168.199.1: seq=61930 ttl=64 time=1.053 ms 64 bytes from 192.168.199.1: seq=61931 ttl=64 time=1.777 ms 64 bytes from 192.168.199.1: seq=61932 ttl=64 time=2.648 ms 64 bytes from 192.168.199.1: seq=61933 ttl=64 time=1.053 ms 64 bytes from 192.168.199.1: seq=62000 ttl=64 time=1.627 ms 64 bytes from 192.168.199.1: seq=62001 ttl=64 time=5.184 ms 64 bytes from 192.168.199.1: seq=62002 ttl=64 time=1.765 ms 64 bytes from 192.168.199.1: seq=62003 ttl=64 time=1.652 ms 64 bytes from 192.168.199.1: seq=62004 ttl=64 time=7.886 ms 64 bytes from 192.168.199.1: seq=62005 ttl=64 time=1.809 ms 64 bytes from 192.168.199.1: seq=62006 ttl=64 time=1.793 ms 64 bytes from 192.168.199.1: seq=62007 ttl=64 time=1.886 ms 64 bytes from 192.168.199.1: seq=62008 ttl=64 time=1.826 ms 64 bytes from 192.168.199.1: seq=62009 ttl=64 time=3.352 ms 64 bytes from 192.168.199.1: seq=62010 ttl=64 time=1.545 ms 64 bytes from 192.168.199.1: seq=62011 ttl=64 time=3.194 ms 64 bytes from 192.168.199.1: seq=62012 ttl=64 time=1.659 ms 64 bytes from 192.168.199.1: seq=62013 ttl=64 time=1.659 ms 64 bytes from 192.168.199.1: seq=62014 ttl=64 time=1.526 ms 64 bytes from 192.168.199.1: seq=62015 ttl=64 time=1.775 ms 64 bytes from 192.168.199.1: seq=62016 ttl=64 time=5.514 ms 64 bytes from 192.168.199.1: seq=62017 ttl=64 time=2.985 ms 64 bytes from 192.168.199.1: seq=62018 ttl=64 time=1.244 ms 64 bytes from 192.168.199.1: seq=62019 ttl=64 time=1.642 ms 64 bytes from 192.168.199.1: seq=62020 ttl=64 time=1.244 ms 64 bytes from 192.168.199.1: seq=62021 ttl=64 time=1.636 ms 64 bytes from 192.168.199.1: seq=62022 ttl=64 time=1.636 ms </pre>	PASS